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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,438	07/26/2006	Fumitake Kaneko	9084-000004/NP	5387
27572 7590 03/18/2008 HARNESSE, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303				
EXAMINER				
EOFF, ANCA				
ART UNIT		PAPER NUMBER		
1795				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/587,438

Applicant(s)

KANEKO ET AL.

Examiner

ANCA EOFF

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CD/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1, 6 and 8 are pending. Claims 2-5 and 7 are canceled.
2. The foreign priority document JP 2004-019346, filed on January 28, 2004 was received and acknowledged. However, in order to benefit of the earlier filing date, a certified English translation is required.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 29, 2008 has been entered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (US Pg-Pub 2003/0224298).

With regard to claim 1, Kobayashi et al. disclose a chemically amplified negative working resist composition comprising an alkali-soluble resin (H), an acid crosslinking agent capable of forming a crosslinked structure under the action of an acid (I), an acid generator (C) and an alkali soluble compound (J) having a molecular weight of up to 2,500 (par.0134-0137).

The crosslinking compound (I) may be a substituted glycoluril, such as tetraalkoxymethyl glycoluril (par.0263).

The component (J) may be benzoic acid or salicylic acid (par.0265) and it is equivalent to the acidic component of the instant application.

The component (C) may be an iodonium salt (par.0198), such as salts of iodonium cations with a sulfonate anion, such as camphorsulfonate (par.0200). The camphorsulfonate anion is identical to the sulfonate of formula (1) of the instant application.

With regard to claim 6, Kobayashi et al. disclose that the resist composition is applied onto a substrate by a suitable coating technique and then is prebaked (par.0272). With a mask having a desired pattern placed above the resist film, the resist film is exposed to actinic radiation and then is further baked (par.0272). Thereafter, the resist film is developed and the desired pattern is formed on the substrate (par.0273).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US Pg-Pub 2003/0224298) in view of Takahashi et al. (JP 2003-121999).

With regard to claim 8, Kobayashi et al. disclose the composition required by claim 1 above (see paragraph 5 of the Office Action), wherein the crosslinking compound (I) may be a substituted glycoluril, such as tetraalkoxymethyl glycoluril compounds (par.0263).

However, Kobayashi et al. fail to specifically disclose that the crosslinking compound is a tetrabutoxymethyl-glycoluril.

Akira et al. disclose a negative resist composition comprising: (A1) a compound generating acid upon irradiation, (B) an alkali-soluble resin and (C) a crosslinker which causes crosslinking under the action of an acid (abstract). The crosslinker (C) may be a tetraalkoxymethylglycoluril, such as tetra(n)butoxymethyl glycoluril and tetra(t)butoxymethyl glycoluril (compounds having the formulas (B-6) and (B-7) in par.0066).

Since Kobayashi et al. disclose the use of tetraalkoxymethyl- glycoluril compounds as crosslinking compound (I) and Takahashi et al. disclose that tetra(n)butoxymethyl glycoluril and tetra(t)butoxymethyl glycoluril are suitable crosslinkers in a negative resist composition, it would have been obvious to one of ordinary skill in the art at the time of the invention to use that tetra(n)butoxymethyl

Art Unit: 1774

glycoluril and tetra(t)butoxymethyl glycoluril as crosslinking compound (I) in the composition of Kobayashi et al.

8. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suetsugu et al. (US Patent 6,329,119) in view Tachikawa et al. (US Pg-Pub 2002/0061467)

With regard to claim 1, Suetsugu et al. disclose a negative-type resist composition comprising an alkali-soluble resin, an acid generator and a crosslinking agent (column 2, lines 32-33).

The acid generator may be an iodonium salt (column 5, line 7), such as bis(4-tert-butylphenyl)iodonium 10-camphorsulfonate (column 5, line 26). The 10-camphorsulfonate anion is identical to the anion of formula (1) of the instant application.

The crosslinking agent is a compound that has an action of crosslinking the alkali-soluble resin by the action of an acid generated from the acid generator (column 6, line 65-column 7, line 1), such as a glycoluril derivative (compound of formula (IV) in column 7, lines 30-40).

However, Suetsugu et al. do not disclose that an acidic compound, such as the ones required by the instant application, is contained in the negative-type resist composition.

Tachikawa et al. disclose a negative-working chemical amplification photoresist composition comprising (A) an alkali-soluble resin, (B) an acid-generating agent and (C) a crosslinking agent (abstract). The composition also comprises a carboxylic acid or an

Art Unit: 1774

oxoacid of phosphorus (E) (par.0040), such as benzoic acid, salicylic acid (par.0043) and phopsphonic acid (par.0044).

Tachikawa et al. further disclose that an ingredient such as the component (E) is known and conventionally employed in the negative-working chemical-amplification photoresist compositions (par.0040) so it would have been obvious to one of ordinary skill in the art at the time of the invention to add an organic carboxylic acid, such as benzoic acid, salicylic acid and phopsphonic acid, as taught by Tachikawa et al., in the negative-type resist composition of Suetsugu, with a reasonable expectation of success.

With regard to claim 6, Suetsugu et al. further disclose that the resist composition is coated on a substrate, is dried (pre-baked) and subjected to exposure for patterning. Then, it is subjected to heat treatment (post-exposure bake) for promoting chemical reaction and then developed with an alkali developer to form a negative resist pattern (column 8, lines 12-20).

Response to Arguments

9. Applicant's arguments with respect to claims 1-3 and 7 have been considered but are moot in view of the new grounds of rejection.

On pages 2 and 3 of the Remarks, the applicant is showing how the amended claims overcome the prior art references used in the previous Office Action. However, new grounds of rejection of the amended claims are shown above in paragraphs of the Office Action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANCA EOFF whose telephone number is (571)272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-4:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. E./
Examiner, Art Unit 1795

/Cynthia H Kelly/
Supervisory Patent Examiner, Art Unit 1795